

AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions and listings of the claims in the application.

LISTING OF THE CLAIMS:

1. (Currently Amended) A method for trapping reaction intermediates of an oxidoreductase comprising the steps of:
a first step of (the first step) dissolving an oxidoreductase, a photoinduced reducing agent that releases electrons by light-irradiation, an amine-type electron donor and a substrate for said oxidoreductase in water and mixing these;
a second step of (the second step) cooling the mixture prepared in the first step to ~~70-270K~~ 70 to 270°K to be frozen;
a third step of (the third step) irradiating the frozen mixture prepared in the second step at ~~70-270K~~ 50 to 265°K with a light in a wavelength region including the absorbing wavelength of said photoinduced reducing agent; and
a fourth step of (the fourth step) raising ~~the temperature of~~ the frozen mixture prepared in the third step to a temperature higher than the temperature of the third step but lower than 270°K ~~the temperature that is 80-270K and is higher than the temperature of the third step.~~
2. (Currently Amended) The method as in claim 1, wherein the mixture ~~prepared in~~ of the first step is cooled in the second to ~~a~~ the temperature lower than the diffusion onset temperature, ~~(hereinafter referred to as "diffusion onset temperature")~~ at which is the temperature at which the substrate starts to diffuse in said mixture ~~in the second step~~; the frozen mixture ~~prepared in~~ of the second step is irradiated in the third step with a light at a temperature lower than the diffusion onset temperature ~~in the third step~~; and ~~the temperature of the frozen mixture prepared in~~ of the third step is raised in the fourth step to a temperature higher than the diffusion onset temperature but lower than ~~270K~~ 270°K ~~in the fourth step.~~
3. (Currently Amended) The method as in claim 2, wherein the frozen mixture ~~prepared in~~ of the second step is irradiated in the third step with a light at a temperature which is ~~5-20K~~ 5 to 20°K lower than the diffusion onset temperature ~~in the third step~~; and ~~the temperature of the frozen mixture prepared in~~ of the third step is raised in the fourth step

to a temperature between the diffusion onset temperature and the diffusion onset temperature plus ~~50K~~ 50°K but lower than ~~270K~~ 270°K ~~in the fourth step~~.

4. (Previously Presented) The method as in claim 1 further comprising ~~(fifth step)~~ cooling the frozen mixture ~~prepared in~~ of the fourth step to a temperature ~~lower~~ than below the diffusion onset temperature.